Matriz final

2. Determinar A^2, sabiendo que $A = \begin{bmatrix} 4 & -1 & 3 \\ 2 & 5 & 3 \\ 6 & 2 & 1 \end{bmatrix}$

$$A^2 = A \times A = \begin{bmatrix} 4 & -1 & 3 \\ 2 & 5 & 3 \\ 6 & 2 & 1 \end{bmatrix} \begin{bmatrix} 4 & -1 & 3 \\ 2 & 5 & 3 \\ 6 & 2 & 1 \end{bmatrix}$$

A \ A	4	-1	3
4	C_{11}	C_{12}	C_{13}
2	C_{21}	C_{22}	C_{23}
6	C_{31}	C_{32}	C_{33}

$C_{11} = (4)(4) + (-1)(2) + (3)(6)$
$= 16 - 2 + 18$
$= 14 + 18$
$= 32$

$C_{12} = (4)(-1) + (-1)(5) + (3)(2)$
$C_{12} = -4 - 5 + 6$
$C_{12} = -3$

$C_{13} = (4)(3) + (-1)(3) + (3)(1)$
$C_{13} = 12 - 3 + 3$
$C_{13} = 12$

$C_{21} = (2)(4) + (5)(2) + (3)(6)$
$C_{21} = 8 + 10 + 18$
$C_{21} = 18 + 18$
$C_{21} = 36$

$C_{22} = (2)(-1) + (5)(5) + (3)(2)$
$C_{22} = -2 + 25 + 6$
$C_{22} = -2 + 31$
$C_{22} = 29$

$C_{23} = (2)(3) + (5)(3) + (3)(1)$
$C_{23} = 6 + 15 + 3$
$C_{23} = 24$

$C_{31} = (6)(4) + (2)(2) + (1)(6)$
$C_{31} = 24 + 4 + 6$
$C_{31} = 34$

$C_{32} = (6)(-1) + (2)(5) + (1)(2)$
$C_{32} = -6 + 10 + 2$
$C_{32} = 6$

$C_{33} = (6)(3) + (2)(3) + (1)(1)$
$C_{33} = 18 + 6 + 1$
$C_{33} = 25$

Reordenamos...

$$\begin{bmatrix} 32 & -3 & 12 \\ 36 & 29 & 24 \\ 34 & 6 & 25 \end{bmatrix}$$

$$A^2 = \begin{bmatrix} 32 & -3 & 12 \\ 36 & 29 & 24 \\ 34 & 6 & 25 \end{bmatrix}$$